REMARKS

The final Office Action, mailed March 9, 2006, considered and rejected claims 1-7 and 9-20. Claims 1-7 and 9-21 were rejected under 35 U.S.C. § 112, first and second paragraphs.[1] In addition, claims 1-7 and 9-20 were rejected under 35 U.S.C. 103(a) as being anticipated by Kaasila (U.S. Patent No. 5,155,805) in view of Stamm (U.S. Patent No. 6,249,908).[2]

By this paper, claims 1, 16, and 20 have been amended, and no claims have been added or cancelled.[3] Accordingly, following this paper, claims 1-7 and 9-21 remain pending, of which, claims 1, 16, and 20 are the only independent claims at issue.

As reflected in the claims listing above, the present invention is generally directed to embodiments employing methods for dynamically determining one or more directions of freedom for one or more control points. As recited in claim 1, for example, a computing system that has access to a set of control points used to generate an outline of a graphical object, while the outline is used to determine how the graphical object is rendered on a pixel grid while some control points are constrained to pre-determined locations. A first direction of compliance is identified and, based on a comparison of a plurality of angles between the first direction of compliance and first and second axes, an axis comparison module automatically and dynamically determines a first direction of freedom in which the control point can be moved to comply with the first constraint, such that the movement of the control point in the first direction of freedom has a reduced likelihood of causing non-compliance with other constraints. Determining the first direction of freedom further includes calculating first and second angles between the first direction of compliance and first and second axes, respectively, and comparing the calculated first angle with the calculated second angle and determining that the first angle is smaller than the second angle.

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[1] Claim 8 was also rejected under 35 U.S.C. § 112, first and second paragraphs. However, inasmuch as claim 8 was cancelled in a prior paper, and is not pending before the Examiner, Applicants do not address this rejection.

[2] Although the prior art status and some of the assertions made with regard to the cited art is not being challenged at this time, Applicants reserve the right to challenge the prior art status and assertions made with regard to the cited art, as well as any official notice, which was taken in the last office action, at any appropriate time in the future, should the need arise, such as, for example in a subsequent amendment or during prosecution of a related application. Accordingly, Applicants' decision not to respond to any particular assertions or rejections in this paper should not be construed as Applicants acquiescing to said assertions or rejections.

[3] Support for the claim amendments may be found within the Applicants' application as originally filed. For example, the claim are clearly supported by paragraphs [0040], [0047] and [0048], among other passages throughout the originally filed specification.

The claimed embodiments recited in the other independent claims (16 and 20) are directed to methods and computer program products, respectively, for dynamically setting the direction of freedom vectors in computing systems, and generally correspond to the method recited in claim 1.

In regards to the rejections under 35 U.S.C. § 112, first and second paragraphs, Applicants initially note that claims 1, 16 and 20 have been amended to remove any reference to font hinting instructions. In light of these amendments, Applicants respectfully submit that written description and indefiniteness rejections regarding claims 1-7 and 9-21 are now moot.

With regard to the rejections under 35 U.S.C. § 103(a), Kaasila, the Examiner's primary reference, is generally directed to specifying projection and freedom vectors in font instructions to facilitate moving control points in displaying digital typeface on raster output devices. However, Kaasila fails to disclose or suggest the method recited in the pending claims. For example, among other things, Kaasila fails to disclose or suggest a method or system which includes using an *axis comparison module* to automatically and dynamically determine a first direction of freedom *based on a comparison of two or more angles* defined by the first direction of compliance and first and second axes by, *inter alia*, calculating first and second angles with axes, *comparing the angles*, and determining that the first angle is smaller than the second angle.

For example, Kaasila discloses specific pre-programmed font instructions for maintaining the symmetry of a lowercase "o" and for maintaining a diagonal stroke weight of a capital "Y" (Col. 7, ll. 55-64). With reference to the lowercase "o" (see Figure 8 and the accompanying description), Kaasila teaches creating font instructions in which the "Projection and Freedom vectors are set in default to be both in the x-axis," and moving the control point along the x-axis. (Col. 8, ll. 20-26). Kaasila also teaches that following movement of the control point along the freedom vector aligned with the x-axis, the font instructions simultaneously set projection and freedom vectors along the y-axis. (Col. 8, ll. 20-26, Figure 8). Accordingly, while Kaasila teaches that the freedom vectors and projection vectors are set in the same direction, along the same axes, Kaasila fails to teach an *axis comparison module* that sets a freedom vector *based on* a *comparison of angles* defined by the first direction of compliance and first and second axes. Instead, the direction is based on manual hinting instructions which specify that the freedom vector should be set along an axis (and without regard to, or consideration of, any second axis or the projection vector).

Kaasila also discloses a second embodiment in which a capital "Y" is manipulated (see Figures 12A-13 and the accompanying description). With reference to this embodiment, Kaasila discloses "the application of font instructions including Delta exceptions and Projection and Freedom vectors to adjust the diagonal strokes of Y." (Col. 10, ll. 14-17). For this embodiment, Kaasila discloses that the font instructions set the direction of both the projection and freedom vectors along a y-axis. (Col. 10, ll. 19-22; Figure 12, ll. 7). Subsequently, the font instructions set a second projection vector parallel to the portion of a font outline defined by the line 1-0, and then rotate the second projection vector to be perpendicular to the line 1-0. (Col. 10, ll. 21-26). Thereafter, font instructions specify that a second freedom vector be set parallel to a portion of the font outline defined by line 6-7, thus defining the direction control point 7 will be moved. (Col. 10, ll. 26-31). A similar instruction is included for specifying the directions of third projection and freedom vectors (Col. 10, ll. 38-43). Specifically, the instructions specify that a third projection vector be set perpendicular to line 5-4, while the third freedom vector is specified to be set parallel to line 7-8. (Col. 10, ll. 39-43).

Accordingly, Kaasila describes setting a freedom vectors along lines specified by the font instructions, but fails to disclose or suggest, *inter alia*, dynamically determining a first direction of freedom with an axis comparison module and based on a comparison of at least two angles defined by the first direction of compliance and first and second axes.

In fact, it appears that Kaasila fails to disclose or teach a system that even contains the functionality necessary to make a calculation of angles, let alone compare the calculated angles, as required. In particular, Kaasila discloses only ten routines available to manipulate and observe the projection vectors (PV) and freedom vectors (FV). (Col. 9, ll. 41-46). These ten routines include six routines to set vectors, two routines to write vectors, and two routines to read vectors. (Col. 9, ll. 49-61).[4] Notably, not a single routine is available to compare a vector against another vector, or against an axis.

Inasmuch as Kaasila does not teach the functionality necessary to calculate angles and compare the calculated, Kaasila fails to teach or suggest each and every limitation of the claimed invention. In fact, the Examiner acknowledges that Kaasila does not explicitly teach comparing

[4] In particular, the routines are: (i) SVTCA which sets PV and FV along an axis; (ii) SPVTCA which sets PV along an axis; (iii) SFVTCA which sets FV along an axis; (iv) SPVTL which sets PV along a specified line; (v) SFVTL which sets FV along a specified line; (vi) WPV which writes a PV; (vii) WFV which writes a FV; (viii) RPV which reads a PV; (ix) RFV which reads a FV; and (x) SFVTPV which sets FV along PV.

angles between a direction of compliance and first and second angles. (Office Action, p. 12). Nevertheless, the Examiner appears to argue that merely because Kaasila teaches that a projection vector (PV) is set along the x-axis (thereby resulting in the formation of an angle of 0° between PV and x-axis and an angle of 90° between PV and y-axis), Kaasila suggests that a comparison is made. (See Office Action, pp. 12-13). Applicants respectfully disagree.

In particular, Kaasila appears to describe a fully functional system in which specific routines are manually input to define how control points should move when a font is displayed. The system is based on a series of routines which are applied to FV and PV, and delta exceptions that are specified and applied to control points which move along the FV. Stated another way, Kaasila appears to describe a system in which a font programmer has fully constrained a glyph with specific, unalterable instructions. The examiner's assertion that angles are or could be compared changes the entire operation of the system, or, at a minimum, creates an undesirable redundancy.

For example, inasmuch as the FV in Kaasila are explicitly defined by coded font instructions, the use of an axis comparison module to compare the PV to multiple axes is entirely unnecessary inasmuch as the font programmer has previously determined the specific manner in which PV and FV should be controlled. In other words, a comparison of the PV to axes would , at best, result in a redundancy that increases processing time, and further, because the font instructions already determine the FV placement without the comparison, such a comparision adds no functional benefit to the already fully constrained fonts.

Further, replacing the coded font instructions with a dynamic comparison by an axis comparison module is clearly also absent. In particular, as noted above, Kaasila discloses only ten vector routines which may be coded by a programmer, but fails to teach any vector routine for comparing vectors and axes. Accordingly, implementing a comparison in lieu of the coded font instructions is contrary to the teachings of Kaasila.

The teachings of the cited Stamm reference similarly fail to remedy the deficiencies of Kaasila. In particular, Stamm teaches a data structure which specifies the freedom direction of a control point. (Fig. 4d). Based on the content of the freedom direction data field, a control point (CP) may be moved in various directions (e.g, if 0, the CP is moved parallel to grid lines; if 1, the CP is moved perpendicular (x-direction) or parallel (y-direction) to a main stroke angle; if 2, the CP is moved perpendicular (x-direction) or parallel (y-direction) to the adjusted italic angle.

(Col. 9, ln. 59 to Col. 10, ln. 6). Accordingly, Stamm appears to teach that the freedom direction data field can control the direction of freedom by using: (i) grid lines; (ii) a main stroke angle; or (iii) an adjusted italic angle as a reference. Notably, this teaching in Stamm does not reference, a PV, let alone teach that a PV is compared to an axis as is claimed in combination with the other recited claim elements.

In other words, Stamm teaches that a font is rendered by including data for determining the direction of freedom based on grid lines, main stroke angles, and adjusted italic angles, but fails to teach *using an axis comparison module* to automatically and dynamically determine a first direction of freedom *based on a comparison* of at least two angles defined by the *first direction of compliance and first and second axes*, as claimed in combination with the other recited elements.

Accordingly, for at least these reasons, Applicants submit that the independent claims (claims 1, 16 and 20) are distinguished over the art of record. Although the foregoing amendments have focused primarily on the independent claims, it will be appreciated that, for at least the foregoing reasons, all of the other rejections and assertions of record with respect to the remaining claims, including the dependent claims, are now moot, and therefore need not be addressed individually.

Nevertheless, Applicants respectfully note that the Examiner has failed to make a *prima facie* case of obviousness with respect to claim 9. In particular, a *prima facie* case of obviousness requires, *inter alia*, that the Examiner provide prior art references that teach or suggest each and every claim limitation. (M.P.E.P. §§ 2142, 2143). While the Office Action rejects claim 9, it fails to even assert that any recited reference teaches setting a "second direction of freedom...*such that the first direction of compliance is used to set the second direction of freedom.*" (*See* Office Action, p. 16). In fact, the Office Action appears to provide no acknowledgement that the above recitation is even embodied within the claim. Applicants note, however, that this element was added to claim 9 in Applicants' Amendment "A" dated July 26, 2005.

The Examiner has, however, repeatedly failed to even address this element.[5] Accordingly, to provide Applicants with a fair opportunity to address the merits of the rejection, and to the extent the Examiner desires to maintain a rejection of claim 9, Applicants respectfully request that the Examiner provide a teaching of each recited claim element. Accordingly, inasmuch as the Examiner has not provided or even asserted any teaching of using a first direction of compliance to set the second direction of freedom, a *prima facie* case of obvious ness has not been met, and withdrawal of the rejection of claim 9 is requested.

In view of at least the foregoing, it will be appreciated that Kaasila and Stamm, either alone or in combination, clearly fail to anticipate or make obvious the claimed invention. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified though a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 9 day of May, 2006.

Respectfully submitted,

RICK D. NYDEGGER
Registration No. 28,651
JENS C. JENKINS
Registration No. 44,803
Attorneys for Applicant
Customer No. 047973

RDN:JCJ:ccn

[5] In fact, the Examiner has failed to address this element in each Office Action following Amendment "A", despite Applicants' repeated requests that the Examiner do so. Accordingly, Applicants renew all prior arguments made with regard to the patentability of claim 9 over the art of record.